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10/579,067	05/22/2007	Yasushi Kobuchi	2691-000044/US	1571

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EXAMINER

ROE, CLAIRE L

ART UNIT	PAPER NUMBER
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1727

MAIL DATE	DELIVERY MODE
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02/16/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/579,067	Applicant(s) KOBUCHI ET AL.	
	Examiner CLAIRE L. ROE	Art Unit 1727	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-14 and 19-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-7, 9-14 and 19-21 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/11/06, 6/14/06, 10/10/08</u> | 6) <input type="checkbox"/> Other: _____ |

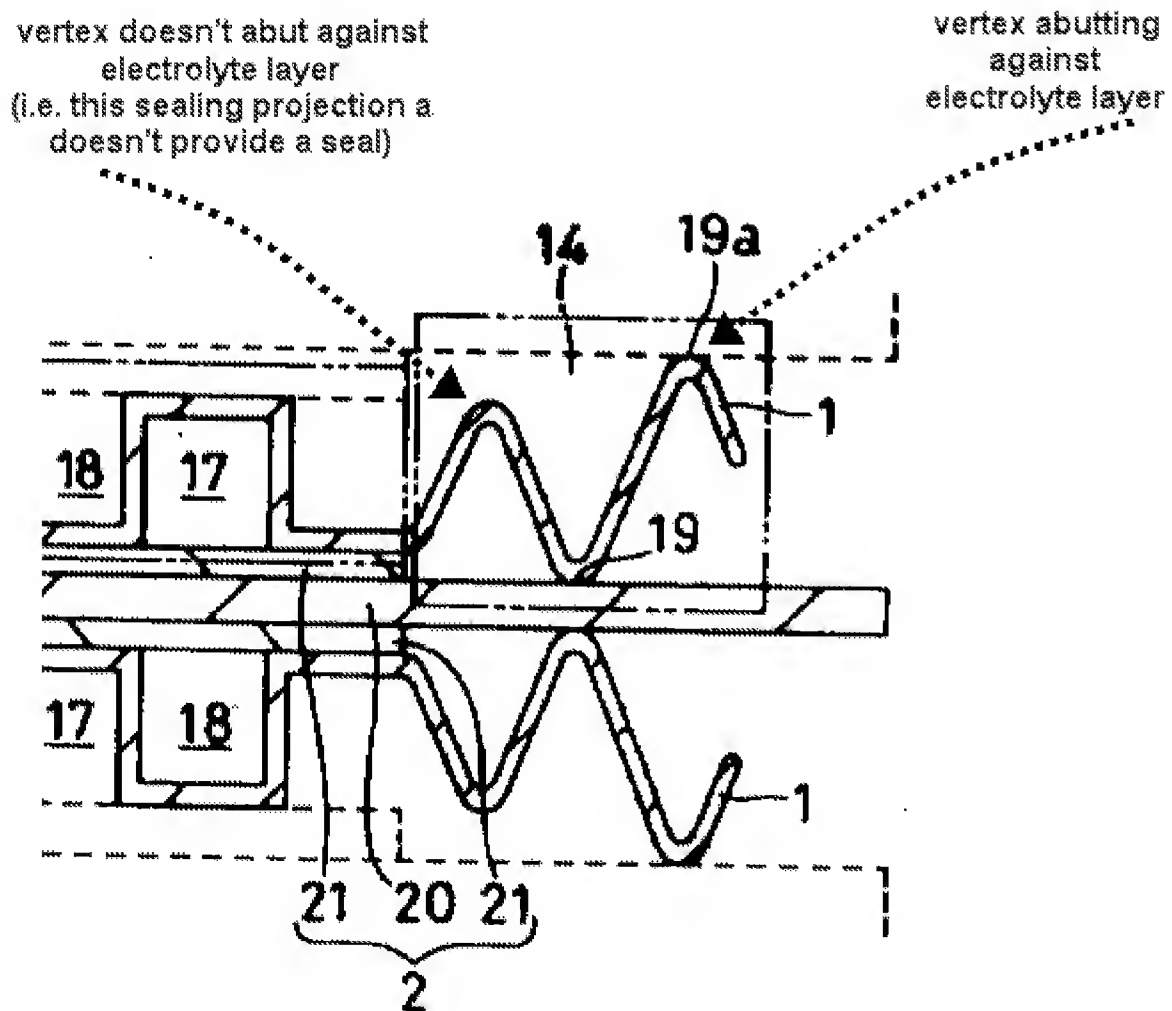
DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed June 14, 2006 contains duplicate listings of references listed twice on this IDS (reference JP 2002-175818) or previously listed on IDS mailed May 11, 2006 (all references lined out except reference JP 2002-175818). They have been placed in the application file, and the information referred to therein has been considered.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the vertices (see claim 9 & 19a of Figure 2) of the sealing projections abutting against the electrolyte layer must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. The following illustration (modified instant Figure 2) is provide for clarification:



Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate

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changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Separator that is Excellent in Workability and Corrosion Resistance.

4. Additionally, the disclosure is objected to because of the following informality:

The Specification initially states that "a typical fuel cell is composed of two electrodes, namely an anode and a cathode, having sandwiched therebetween an electrolyte" (Specification, bottom of page 1), but then goes on to state that a "separator is designed to be interposed between the adjacent ones of a plurality of electrolyte assemblies each constructed of an electrolyte layer containing an electrolyte medium and a catalytic electrode disposed on a surface in a thickness-wise direction of the electrolyte layer" (Specification, middle to bottom of page 2). The first description is

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correct, and the second description is confusing. An electrolyte assembly of a fuel cell must contain two electrodes (one positive, one negative) with an electrolyte layer inbetween said catalytic electrodes in order for the electrolyte assembly and fuel cell to function properly. Therefore, the statement that "a plurality of electrolyte assemblies, each constructed of an electrolyte layer congaing an electrolyte medium and a catalytic electrode disposed on a surface in a thickness-wise direction of the electrolyte layer" should be changed to read "a plurality of electrolyte assemblies, each constructed of an electrolyte layer congaing an electrolyte medium sandwiched between two catalytic electrodes, wherein said catalytic electrodes are each disposed on the electrolyte layer in a thickness-wise direction of the electrolyte layer, "

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 2-14 and 19-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 contains the limitation of a fuel-cell separator which is interposed between a plurality of electrolyte assemblies..., the fuel-cell separator comprising a sealing section which is formed in a manner such that, when the fuel cell is in its yet-to-be assembled condition a vertex of the sealing projection extends beyond a position of

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contact with the electrolyte assembly (intermediate product) in contrast to a case where the fuel cell is in its assembled condition (final product) (claim 2, lines 22-26). For examination purposes, the limitation that the fuel cell is in its assembled condition (final product) was interpreted as the Applicant's invention.

Furthermore, claim 2 contains the limitation "a plurality of electrolyte assemblies, each constructed of an electrolyte layer containing an electrolyte medium and a catalytic electrode disposed on a surface in a thickness-wise direction of the electrolyte layer" (claim 2, lines 1-6) which is indefinite because an electrolyte assembly of a fuel cell must contain two electrodes (one positive, one negative) with an electrolyte layer inbetween said catalytic electrodes in order for the electrolyte assembly and fuel cell to function properly. Therefore, the limitation "a plurality of electrolyte assemblies, each constructed of an electrolyte layer containing an electrolyte medium and a catalytic electrode disposed on a surface in a thickness-wise direction of the electrolyte layer" was interpreted as meaning to read "a plurality of electrolyte assemblies, each constructed of an electrolyte layer containing an electrolyte medium sandwiched between two catalytic electrodes, wherein said catalytic electrodes are each disposed on the electrolyte layer in a thickness-wise direction of the electrolyte layer, "

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 2 & 4-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Reeder (US 6,040,076).

Regarding claim 2, Reeder discloses a fuel cell separator (10, col. 4, lines 23-28; Fig. 2) which is interposed between adjacent ones of a plurality of electrolyte assemblies (20 & 21 & 22 & 23 & 24, col. 4, lines 29-40; Fig. 2), each constructed of an electrolyte layer containing an electrolyte medium (22, col. 4, lines 29-40; Fig. 2) sandwiched between two catalytic electrodes (20 & 21, col. 4, lines 29-40; Fig. 2), wherein said catalytic electrodes are each disposed on the electrolyte layer in a thickness-wise direction of the electrolyte layer (col. 4, lines 29-40; Fig. 2), the fuel cell separator comprising:

A separating section (col. 3, lines 61-67 & col. 4, lines 29-40; Fig. 2) for achieving separation between a fuel gas channel (25, col. 4, lines 29-40; Fig. 2) and an oxidizer gas channel (26, col. 4, lines 29-40; Fig. 2); and

A sealing section (15 & 17, col. 3, lines 61-67 & col. 4, lines 29-40; Fig. 2) disposed along an outer periphery of the separator (col. 3, lines 61-67 & col. 4, lines 29-40; Fig. 2) for preventing leakage of fuel gas and oxidizer gas (col. 3, lines 61-67 & col. 4, lines 29-40), the separating section and the sealing section being integrally formed with each other (col. 3, lines 50-25 & 61-67 & col. 4, lines 18-21; Fig. 2),

Wherein a region corresponding to the sealing section is provided with a sealing projection (15, col. 3, lines 61-67 & col. 4, lines 29-40; Fig. 2) which is formed so as to extend in parallel with the surface of the electrolyte assembly (col. 3, lines 61-67 & col. 4, lines 29-40; Fig. 2), a vertex of which is brought into pressure-contact with the

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electrolyte assembly under a resilient force (col. 3, lines 61-67 & col. 4, lines 29-40; Fig. 2), and

Wherein a sectional profile of the sealing projection (15, col. 3, lines 61-67 & col. 4, lines 29-40; Fig. 2) perpendicular to a direction in which fuel gas and oxidizer gas flow is U-shaped (Fig. 2).

The Examiner notes that for examination purposes, the limitation that the fuel cell is in its assembled condition (final product) was interpreted as the Applicant's invention.

With regard to claim 4, Reeder discloses that the fuel cell separator (10, col. 4, lines 23-28; Fig. 2) is constituted by a metal sheet (col. 4, lines 18-21).

With regard to claim 5, Reeder discloses that the separating section has a plurality of parallelly arranged U-shaped channels (Fig. 2) positioned in parallel with the surface of the electrolyte assembly (col. 3, lines 61-67 & col. 4, lines 29-40; Fig. 2).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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9. Claims 3, 6, & 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reeder (US 6,040,076), as applied to claim 2 above.

With regard to claim 3, Reeder teaches that the fuel cell separator (10, col. 4, lines 23-28; Fig. 2) is constituted by a metal sheet (col. 4, lines 18-21). The Examiner notes that the product-by-limitations of claim 6 are not given patentable weight since the courts have held that patentability is based on a product itself, even if the prior art product is made by a different process (*In re Thorpe*, 227 USPQ 964, 1985). Moreover, a product-by-process limitation is held to be obvious if the product is similar to a prior art product (*In re Brown*, 173 USPQ 685, and *In re Fessmann*, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974)). Claim 6 as written do not distinguish the product of the instant application from the product of the prior art.

With regard to claim 6, Reeder teaches that the fuel cell separator (10, col. 4, lines 23-28; Fig. 2) is constituted by a metal sheet (col. 4, lines 18-21). The Examiner notes that the product-by-limitations of claim 6 are not given patentable weight since the courts have held that patentability is based on a product itself, even if the prior art product is made by a different process (*In re Thorpe*, 227 USPQ 964, 1985). Moreover, a product-by-process limitation is held to be obvious if the product is similar to a prior art product (*In re Brown*, 173 USPQ 685, and *In re Fessmann*, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974)). Claim 6 as written do not distinguish the product of the instant application from the product of the prior art. Furthermore, the Examiner notes

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that Reeder teaches that the separating section and the sealing section are formed by way of press working (col. 4, lines 18-21).

With regard to claim 10, Reeder discloses that the separator further comprises an auxiliary projection analogous to the sealing projection formed in a region other than the sealing section and the separating section (col. 3, lines 50-67 & col. 4, lines 29-40; Figs. 1-2), but Reeder fails to specifically state that the auxiliary projection is disposed in such a way as to make uniform the distribution of contact pressure which occurs between the separator and the electrolyte assembly.

While Reeder fails to specifically state that the auxiliary projection is disposed in such a way as to make uniform the distribution of contact pressure which occurs between the separator and the electrolyte assembly at the time of assembly of the fuel cell including the separator, one of ordinary skill in the art would understand that the auxiliary projection would make uniform the distribution of contact pressure which occurs between the separator and the electrolyte assembly because the auxiliary projection of Reeder is a continuation of the sealing projection merely extending past the separating section / electrolyte assembly (i.e. the projections are made of the same material and have the same height).

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reeder (US 6,040,076), as applied to claim 2 above, in view of Krasij et al. (US 6,165,634) and Reznikov (US 5,232,792).

With regard to claim 7, Reeder fails to teach a high polymer elastic layer.

Krasij et al. teaches the concept of a fuel cell separator sealing projection (col. 4, lines 9-13; Fig. 2) having a high polymer elastic layer / fluoroelastomer material (30, col. 4, lines 9-13; Fig. 2) in its area to be contacted by the membrane electrolyte assembly (col. 4, lines 9-13; Fig. 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the concept of a separator sealing projection having a high polymer elastic layer / fluoroelastomer material in its area to be contacted by the membrane electrolyte assembly of Krasij et al. to the separator sealing projection(s) of Reeder in order to improve the sealing characteristics of the fuel cell (col. 4, lines 9-13 & 48-51).

Modified Reeder fails to teach that the sealing projection having a high polymer elastic layer / fluoroelastomer material contacts the electrolyte layer.

Reznikov teaches the concept of a fuel cell separator (20, col. 6, lines 25-31) having a sealing projection / electrolyte seal structure (21, col. 6, lines 37-43) contact the electrolyte layer (11, col. 6, lines 37-43) completely around the electrolyte periphery in order to form a separator plate - electrolyte seal / sealing projection seal under cell operating conditions (col. 6, lines 37-43) and prevent and/or minimize gas leakage (col. 1, lines 24-28).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the concept of having the sealing projection / electrolyte seal structure contact the electrolyte layer completely around the electrolyte periphery of Reznikov to

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the sealing projection having a high polymer elastic layer / fluoroelastomer material of modified Reeder in order to form a separator plate - electrolyte seal / sealing projection seal under cell operating conditions (col. 6, lines 37-43) and prevent and/or minimize gas leakage (col. 1, lines 24-28).

11. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reeder (US 6,040,076), as applied to claim 2 above, and further in view of Reznikov (US 5,232,792).

With regard to claim 9, Reeder teaches a plurality of sealing projections (15, col. 3, lines 61-67 & col. 4, lines 29-40; Fig. 2) which are formed so as to extend in parallel with the surface of the electrolyte assembly (col. 3, lines 61-67 & col. 4, lines 29-40; Fig. 2), a vertices of which are brought into pressure-contact with the electrolyte assembly under a resilient force (col. 3, lines 61-67 & col. 4, lines 29-40; Fig. 2), but fails to teach that the sealing projection contacts the electrolyte layer.

Reznikov teaches the concept of a fuel cell separator (20, col. 6, lines 25-31) having a sealing projection / electrolyte seal structure (21, col. 6, lines 37-43) contact the electrolyte layer (11, col. 6, lines 37-43) completely around the electrolyte periphery in order to form a separator plate - electrolyte seal / sealing projection seal under cell operating conditions (col. 6, lines 37-43) and prevent and/or minimize gas leakage (col. 1, lines 24-28).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the concept of having the sealing projection / electrolyte seal structure contact the electrolyte layer completely around the electrolyte periphery of Reznikov to the sealing projection of Reeder in order to form a separator plate - electrolyte seal / sealing projection seal under cell operating conditions (col. 6, lines 37-43) and prevent and/or minimize gas leakage (col. 1, lines 24-28).

12. Claims 11-14 & 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reeder (US 6,040,076), as applied to claim 2 above, and further in view of Miyagawa (JP 2003-297383).

With regard to claims 11-14 & 19-21, Reeder teaches that the fuel cell separator (10, col. 4, lines 23-28; Fig. 2) is constituted by a metal sheet (col. 4, lines 18-21), but fails to teach a coating layer having electrical conductivity, or teach that an adherent layer or a surface-treated layer lies under the coating layer, or teach that in the region of the coating layer that makes contact with the electrolyte assembly is formed a high conductive layer that is higher in electrical conductivity than the coating layer.

Miyagawa teaches a fuel cell separator (10, paragraph [0026]) comprising a metal substrate (11, paragraph [0026]) coated with an electric conduction layer (12, paragraph [0026]) on both sides (paragraph [0026]), wherein the electric conduction layer comprises a first resin layer (13, paragraph [0028]) and a second resin layer (14, paragraph [0028]), wherein the second resin layer has smaller resistivity / higher

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conductivity than the first resin layer (paragraph [0028]), wherein the first resin layer is adjacent the metal substrate and the second resin layer is adjacent the first resin layer such that the second resin layer makes contact with a electrolyte assembly (3a & 2a / 3b & 2b, paragraphs [0026-[0028]; Figure 2), wherein the resin of the electric conduction layer can be a fluororesin or fluororubber (paragraph [0034]), and wherein the surface of the metal substrate can be treated in order to improve an adhesive property with the resin layer (paragraph [033]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the electric conduction layer comprising a first resin layer and a second resin layer, wherein the second resin layer has smaller resistivity / higher conductivity than the first resin layer, wherein the first resin layer is adjacent the metal substrate and the second resin layer is adjacent the first resin layer, wherein the resin of the electric conduction layer can be a fluororesin or fluororubber, wherein the surface of the metal substrate can be treated in order to improve an adhesive property with the resin layer of Miyagawa to the separator of Reeder in order to allow the separator to have small contact surface with electrodes (paragraph [0028]) and to produce a fuel cell separator that has high electrical conductivity, excellent current collection performance, moldability, hardness, and corrosion resistance (paragraphs [0007] & [0028]).

Double Patenting

13. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 2, 5, 11-12, 14 & 20-21 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 2-3, and 5 of copending Application No. 10/582,269. Although the conflicting claims are not identical, they are not patentably distinct from each other because both claim the following:

A fuel cell separator which is interposed between a plurality of electrolyte assemblies each constructed of an electrolyte layer containing an electrolyte medium and a catalytic electrode disposed on a surface in a thickness-wise direction of the electrolyte layer (instant application; claim 2; Application 10/582,269: claim 2), the separator comprising:

A separating section for achieving separation between a fuel gas channel and an oxidizer gas channel (instant application; claim 2; Application 10/582,269: claim 2); and

A sealing section disposed along an outer periphery of the separator for preventing leakage of fuel gas and oxidizer gas (instant application; claim 2; Application 10/582,269: claim 2),

Wherein the separating section is formed of a metal sheet serving as a core member and a resin layer / synthetic resin-made coating layer formed on a surface of the flat metal sheet (instant application; claims 2 & 11; Application 10/582,269: claim 2), where the resin layer is provided with the fuel gas channels

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or oxidizer gas channels (instant application; claims 2 & 5; Application 10/582,269: claim 2), and

Wherein on a surface of the resin layer is formed a high conductive layer having higher electrical conductivity than electrical conductivity of the resin layer (instant application; claims 2, 11-12, 14 & 20-21; Application 10/582,269: claims 2-3)

Wherein the sealing section is provided with a sealing projection extending in parallel with a surface of the electrolyte assembly on which a catalytic electrode is formed, the sealing section having a vertex which is constituted so as to be brought into pressure-contact with the electrode assembly under a resilient force (instant application; claim 2; Application 10/582,269: claim 2), and

Where the sealing projection has a U-shaped or V-shaped sectional profile when viewed from a direction perpendicular to a direction in which the fuel gas and the oxidizer gas flow (instant application; claim 2; Application 10/582,269: claim 2).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Allowable Subject Matter

15. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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The following is an examiner's statement of reasons for allowance: The prior art of record, Reeder (US 6,040,076), Krasij et al. (US 6,165,634), Reznikov (US 5,232,792), and Miyagawa (JP 2003-297383), does not disclose, teach, or suggest alone or in any combination a fuel cell separator comprising: a separating section for achieving separation between a fuel gas channel and an oxidizer gas channel, a sealing section disposed along an outer periphery of the separator, the separating section and the sealing section being integrally formed, wherein a region corresponding to the sealing section is provided with a sealing projection which is formed so as to extend in parallel with the surface of the electrolyte assembly, a vertex of which is brought into pressure-contact with the electrolyte assembly under a resilient force, wherein the sealing projection has, at least in its area to be contacted by the electrolyte layer, a high polymer elastic layer formed of an elastic body, wherein the high polymer elastic layer has a width ranging from 1 to 10 mm and a thickness ranging from 1 to 100µm.

Conclusion

16. The prior art made of record and not relied upon which is considered pertinent to applicant's disclosure is as follows: Mosdale et al. (US 2002/0090542) teaches the concept of a seal surrounding the periphery of electrodes and the electrolytic layer in order to prevent fuel and oxidant from escaping the electrode assembly towards the outside.

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17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CLAIRE L. ROE whose telephone number is (571)272-9809. The examiner can normally be reached on Monday - Thursday, 8:00AM - 4:00PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on 571-272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. L. R./
Examiner, Art Unit 1727

/Dah-Wei D. Yuan/
Supervisory Patent Examiner, Art Unit 1727